

LISTING OF THE CLAIMS:

Claims 1-24 (Canceled)

Claim 25 (Currently Amended): An ink jet recording method, which comprises the steps of:

producing an ink for ink jet recording according to the method of claim 30;

~~preparing a colored fine particle dispersion including at least a hydrophobic high-boiling organic solvent having a boiling point of at least 150°C and an oil-soluble dye;~~

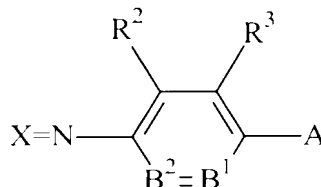
~~adding an ionic group-containing water-insoluble polymer to the colored fine particle dispersion to prepare an ink; and~~

using the ink for ink jet recording.

Claim 26 (Original): The method of claim 25, wherein the step of using the ink for ink jet recording includes using an image-receiving material comprising a support and, on the support, an ink-receiving layer including a porous inorganic pigment.

Claim 27 (Original): The method of claim 25, wherein the oil-soluble dye is represented by the following general formula I:

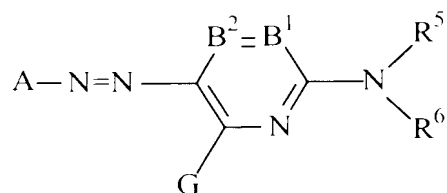
General formula I



wherein X represents a residue of a color-photographic coupler; A represents $-NR^4R^5$ or a hydroxyl group; R^4 and R^5 each independently represents a hydrogen atom, an aliphatic group, an aromatic group or a heterocyclic group; B^1 represents $=C(R^6)-$ or $=N-$; B^2 represents $-C(R^7)=$ or $-N=$; R^2 , R^3 , R^6 and R^7 each independently represents a hydrogen atom, a halogen atom, an aliphatic group, an aromatic group, a heterocyclic group, a cyano group, $-OR^{51}$, $-SR^{52}$, $-CO_2R^{53}$, $-OCOR^{54}$, $-NR^{55}R^{56}$, $-CONR^{57}R^{58}$, $-SO_2R^{59}$, $-SO_2NR^{60}R^{61}$, $-NR^{62}CONR^{63}R^{64}$, $-NR^{65}CO_2R^{66}$, $-COR^{67}$, $-NR^{68}COR^{69}$ or $-NR^{70}SO_2R^{71}$; R^{51} , R^{52} , R^{53} , R^{54} , R^{55} , R^{56} , R^{57} , R^{58} , R^{59} , R^{60} , R^{61} , R^{62} , R^{63} , R^{64} , R^{65} , R^{66} , R^{67} , R^{68} , R^{69} , R^{70} and R^{71} each independently represents a hydrogen atom, an aliphatic group or an aromatic group; and R^2 and R^3 , R^3 and R^4 , R^4 and R^5 , R^5 and R^6 , and R^6 and R^7 may be bound to each other to form a ring.

Claim 28 (Original): The method of claim 25, wherein the oil-soluble dye is represented by the following general formula M-I:

General formula M-I

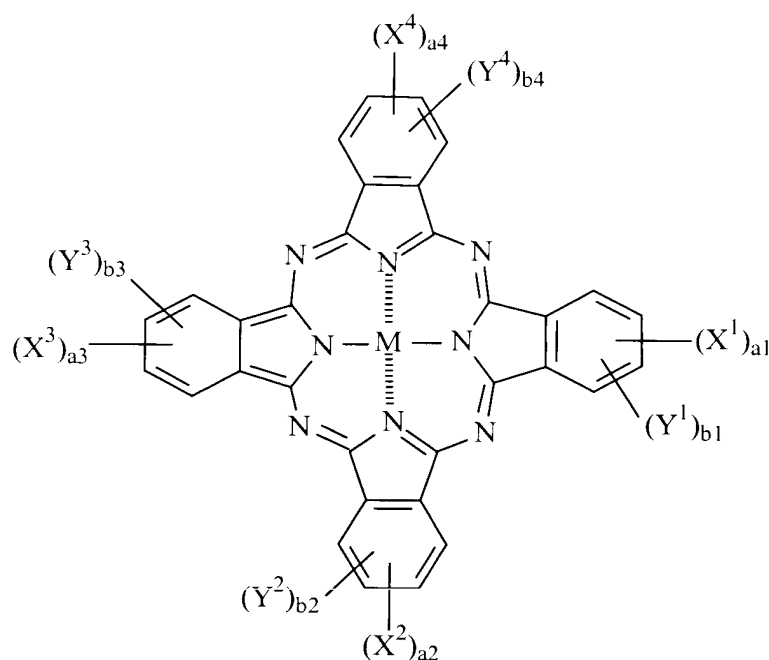


wherein A represents a residue of a 5-membered heterocyclic ring diazo component A-NH₂; B¹ represents =CR¹- and B² represents -CR²=, or B¹ represents a nitrogen atom and B² represents -CR²=, or B¹ represents =CR¹- and B² represents a nitrogen atom; R⁵ and R⁶ each independently represents a hydrogen atom, aliphatic group, aromatic group, heterocyclic group, acyl group, alkoxycarbonyl group, aryloxy carbonyl group, carbamoyl group, alkylsulfonyl group, arylsulfonyl group or sulfamoyl group, and each of these groups may have a further substituent group; G, R¹ and R² each independently represents a hydrogen atom, halogen atom, aliphatic group, aromatic group, heterocyclic group, cyano group, carboxyl group, carbamoyl group, alkoxycarbonyl group, aryloxy carbonyl group, acyl group, hydroxy group, alkoxy group, aryloxy group, silyloxy group, acyloxy group, carbomoyloxy group, heterocyclic oxy group, alkoxycarbonyloxy group, aryloxy carbonyloxy group, amino group, anilino group, acylamino group, ureido group, sulfamoylamino group, alkoxycarbonylamino group, alkylarylsulfonylamino group, arylsulfonylamino group, aryloxy carbonylamino group, nitro group, alkylthio group, arylthio group, alkylsulfonyl group, arylsulfonyl group, alkylsulfinyl group, arylsulfinyl group, sulfamoyl group, sulfo group or heterocyclic thio group, and each of

these groups may have a further substituent group; and R^1 and R^5 or R^5 and R^6 may be bonded to form a 5- or 6-membered ring.

Claim 29 (Original): The method of claim 25, wherein the oil-soluble dye is represented by the following general formula C-I:

General formula C-I



wherein X^1 , X^2 , X^3 and X^4 each independently represents $-\text{SO}-Z^1$, $-\text{SO}_2-Z^1$ or $-\text{SO}_2\text{NR}^{21}\text{R}^{22}$; each Z^1 independently represents a substituted or unsubstituted alkyl group, a substituted or unsubstituted cycloalkyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocyclic group; each of R^{21} and R^{22} independently represents a

hydrogen atom, a substituted or unsubstituted alkyl group, a substituted or unsubstituted cycloalkyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocyclic group, but R^{21} and R^{22} are not both hydrogen atoms; Y^1 , Y^2 , Y^3 and Y^4 each represents a monovalent substituent; and a^1 , a^2 , a^3 , a^4 , b^1 , b^2 , b^3 and b^4 represent substituent numbers for X^1 , X^2 , X^3 , X^4 , Y^1 , Y^2 , Y^3 and Y^4 respectively, each substituent number being an integer from 0 to 4 and the sum of a^1 , a^2 , a^3 and a^4 being at least 2.

Claim 30 (Original): A method of producing an ink for ink jet recording, the method comprising the steps of:

dispersing colored fine particles, which include at least a hydrophobic high-boiling organic solvent having a boiling point of at least 150 °C and an oil-soluble dye, in an aqueous medium to prepare a colored fine particle dispersion;

dispersing by emulsification of an ionic group-containing water-insoluble polymer to prepare a fine particle dispersion; and

mixing the fine particle dispersion with the colored fine particle dispersion.

Claim 31 (New): The method of claim 30, wherein the ionic group-containing water-insoluble polymer comprises at least one of a vinyl polymer or a condensation polymer selected from the group consisting of polyurethane, polyester, polyamide, polyurea and polycarbonate.

Claim 32 (New): The method of claim 30, wherein the ionic group-containing water-insoluble polymer is a self-emulsifiable water-dispersible polymer.

Claim 33 (New): The method of claim 30, wherein the ionic group-containing water-insoluble polymer comprises at least one of a carboxyl group or a sulfonic acid group.

Claim 34 (New): The method of claim 30, wherein molecular weight of the ionic group-containing water-insoluble polymer is from 1,000 to 200,000.

Claim 35 (New): The method of claim 30, wherein the content of the hydrophobic high-boiling organic solvent in the colored fine particles is 25 % by weight or more.

Claim 36 (New): The method of claim 30, wherein the ionic group-containing water-insoluble polymer comprises ionic groups in the amount of 0.1 to 3.0 mmol/g.

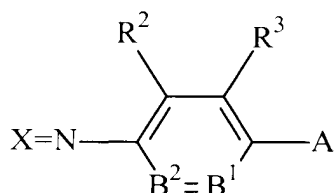
Claim 37 (New): The method of claim 30, wherein the ionic group-containing water-insoluble polymer comprises an amount of 0.1 to 30 % by weight relative to the total amount of the ink.

Claim 38 (New): The method of claim 30, wherein the ionic group-containing water-insoluble polymer comprises a vinyl polymer, the vinyl polymer including an ionic group selected from the group consisting of a carboxyl group, a sulfonic acid group, a monosulfate

group, -OPO(OH)₂, a sulfinic acid group, a salt of a carboxyl group, a salt of a sulfonic acid group, a salt of a monosulfate group, a salt of -OPO(OH)₂, a salt of a sulfinic acid group, a primary amine, a secondary amine, a tertiary amine, a salt of a primary amine, a salt of a secondary amine, a salt of a tertiary amine, and a quaternary ammonium salt.

Claim 39 (New): The method of claim 30, wherein the oil-soluble dye is represented by the following general formula I:

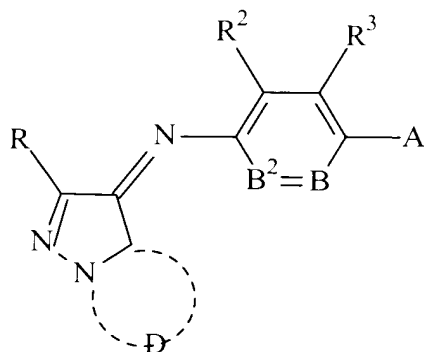
General formula I



wherein X represents a residue of a color-photographic coupler; A represents -NR⁴R⁵ or a hydroxyl group; R⁴ and R⁵ each independently represents a hydrogen atom, an aliphatic group, an aromatic group or a heterocyclic group; B¹ represents =C(R⁶)- or =N-; B² represents -C(R⁷)= or -N=; R², R³, R⁶ and R⁷ each independently represents a hydrogen atom, a halogen atom, an aliphatic group, an aromatic group, a heterocyclic group, a cyano group, -OR⁵¹, -SR⁵², -CO₂R⁵³, -OCOR⁵⁴, -NR⁵⁵R⁵⁶, -CONR⁵⁷R⁵⁸, -SO₂R⁵⁹, -SO₂NR⁶⁰R⁶¹, -NR⁶²CONR⁶³R⁶⁴, -NR⁶⁵CO₂R⁶⁶, -COR⁶⁷, -NR⁶⁸COR⁶⁹ or -NR⁷⁰SO₂R⁷¹; R⁵¹, R⁵², R⁵³, R⁵⁴, R⁵⁵, R⁵⁶, R⁵⁷, R⁵⁸, R⁵⁹, R⁶⁰, R⁶¹, R⁶², R⁶³, R⁶⁴, R⁶⁵, R⁶⁶, R⁶⁷, R⁶⁸, R⁶⁹, R⁷⁰ and R⁷¹ each independently represents a hydrogen atom, an aliphatic group or an aromatic group; and R² and R³, R³ and R⁴, R⁴ and R⁵, R⁵ and R⁶, and R⁶ and R⁷ may be bound to each other to form a ring.

Claim 40 (New): The method of claim 39, wherein the oil-soluble dye represented by the general formula I comprises a compound represented by the following general formula II:

General formula II

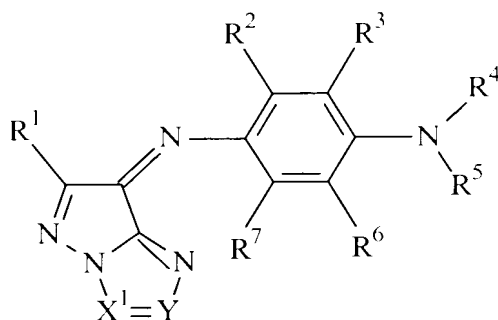


wherein R^1 represents a hydrogen atom, an aliphatic group, an aromatic group, a heterocyclic group, a cyano group, $-OR^{11}$, $-SR^{12}$, $-CO_2R^{13}$, $-OCOR^{14}$, $-NR^{15}R^{16}$, $-CONR^{17}R^{18}$, $-SO_2R^{19}$, $-SO_2NR^{20}R^{21}$, $-NR^{22}CONR^{23}R^{24}$, $-NR^{25}CO_2R^{26}$, $-COR^{27}$, $-NR^{28}COR^{29}$ or $-NR^{30}SO_2R^{31}$; R^1 , R^2 , R^3 , R^{13} , R^{14} , R^{15} , R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , R^{21} , R^{22} , R^{23} , R^{24} , R^{25} , R^{26} , R^{27} , R^{28} , R^{29} , R^{30} and R^{31} each independently represents a hydrogen atom, an aliphatic group or an aromatic group; D represents an atomic group forming a 5- or 6-membered nitrogenous heterocyclic ring which may be substituted with at least one substituent group and may further form a fused ring with another ring; at least one substituent group on the atomic group represented by D is an aliphatic group, an aromatic group, a heterocyclic group, a cyano group, $-OR^{81}$, $-SR^{82}$, $-CO_2R^{83}$, $-OCOR^{84}$, $-NR^{85}R^{86}$, $-CONR^{87}R^{88}$, $-SO_2R^{89}$, $-SO_2NR^{90}R^{91}$, $-NR^{92}CONR^{93}R^{94}$, $-NR^{95}CO_2R^{96}$, $-COR^{97}$, $-NR^{98}COR^{99}$ or $-NR^{100}SO_2R^{101}$; and R^{81} , R^{82} , R^{83} , R^{84} , R^{85} , R^{86} , R^{87} , R^{88} , R^{89} , R^{90} , R^{91} , R^{92} , R^{93} ,

R^{94} , R^{95} , R^{96} , R^{97} , R^{98} , R^{99} , R^{100} and R^{101} each independently represents a hydrogen atom, an aliphatic group or an aromatic group.

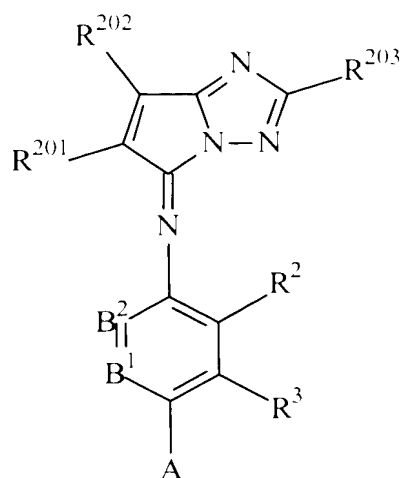
Claim 41 (New): The method of claim 40, wherein the compound represented by the general formula II is a compound represented by the following general formula III:

General formula III

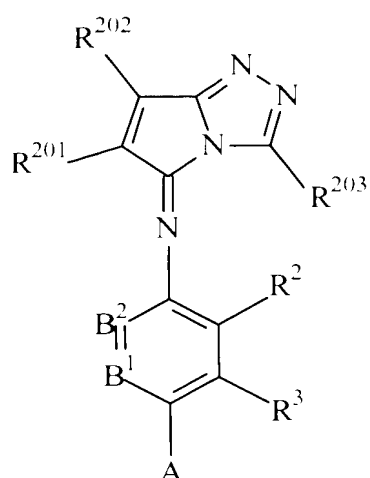


wherein one of X¹ and Y represents -N= and the other represents -C(R⁸)=, and R⁸ represents a hydrogen atom, an aliphatic group or an aromatic group.

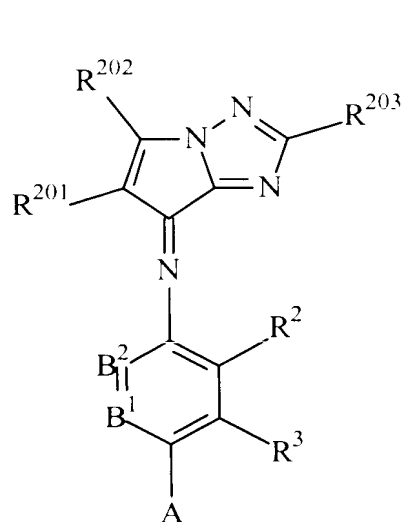
Claim 42 (New): The method of claim 39, wherein the oil-soluble dye represented by the general formula I comprises at least one compound represented by one of the following formulae IV-1 to IV-4:



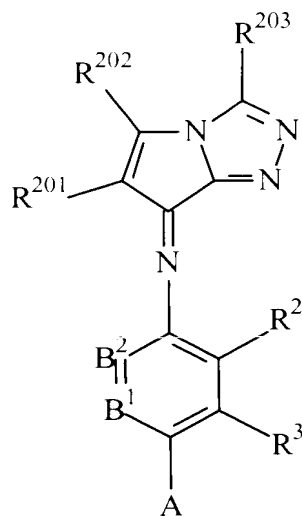
(IV-1)



(IV-2)



(IV-3)



(IV-4)

wherein R²⁰¹, R²⁰² and R²⁰³ each independently represents a hydrogen atom, an aliphatic group, an aromatic group, a heterocyclic group, a cyano group, -OR¹¹, -SR¹², -CO₂R¹³,

Claim 43 (New): The method of claim 30, wherein the oil-soluble dye is represented by the following general formula M-I:

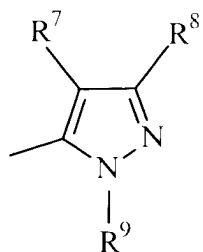
$$\begin{array}{c} \text{A}-\text{N}=\text{N}-\text{C}_6\text{H}_3-\text{N}-\text{R}^5 \\ | \qquad \qquad \qquad | \\ \text{B}^2=\text{B}^1 \qquad \qquad \text{R}^6 \end{array}$$

wherein A represents a residue of a 5-membered heterocyclic ring diazo component A-NH₂; B¹ represents =CR¹- and B² represents -CR²=, or B¹ represents a nitrogen atom and B² represents -CR²=, or B¹ represents =CR¹- and B² represents a nitrogen atom; R⁵ and R⁶ each independently represents a hydrogen atom, aliphatic group, aromatic group, heterocyclic group, acyl group, alkoxy carbonyl group, aryloxy carbonyl group, carbamoyl group, alkylsulfonyl group, arylsulfonyl group or sulfamoyl group, and each of these groups may have a further substituent group; G, R¹ and R² each independently represents a hydrogen atom, halogen atom, aliphatic

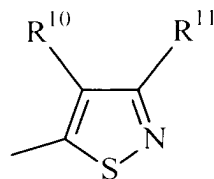
group, aromatic group, heterocyclic group, cyano group, carboxyl group, carbamoyl group, alkoxycarbonyl group, aryloxy carbonyl group, acyl group, hydroxy group, alkoxy group, aryloxy group, silyloxy group, acyloxy group, carbomoyloxy group, heterocyclic oxy group, alkoxycarbonyloxy group, aryloxy carbonyloxy group, amino group substituted by alkyl group or aryl group or heterocyclic group, acylamino group, ureido group, sulfamoylamino group, alkoxycarbonylamino group, alkylarylsulfonylamino group, arylsulfonylamino group, aryloxy carbonylamino group, nitro group, alkylthio group, arylthio group, alkylsulfonyl group, arylsulfonyl group, alkylsulfinyl group, arylsulfinyl group, sulfamoyl group, sulfo group or heterocyclic thio group, and each of these groups may have further substituent group(s); and R¹ and R⁵ or R⁵ and R⁶ may be bonded to form a 5- or 6-membered ring.

Claim 44 (New): The method of claim 43, wherein A in the general formula M-I is represented by one of the following formulae M-a through M-f:

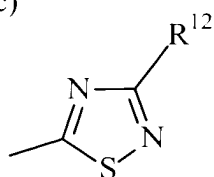
(M—a)



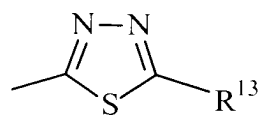
(M—b)



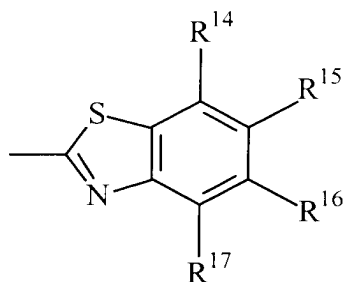
(M—c)



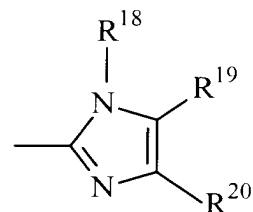
(M—d)



(M—e)



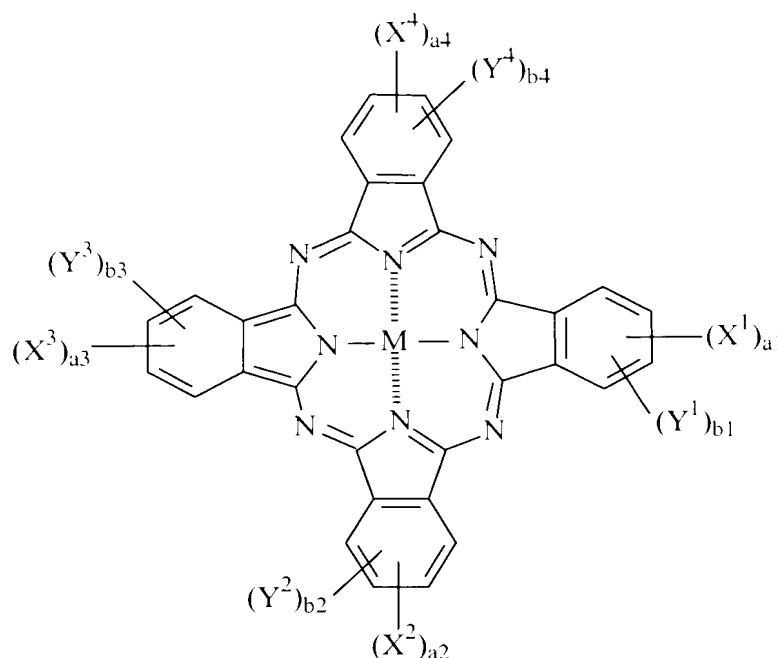
(M—f)



wherein R^7 through R^{20} each independently represents the same range of substituents as each of G , R^1 and R^2 of the general formula M-I.

Claim 45 (New): The method of claim 30, wherein the oil-soluble dye is represented by the following general formula C-I:

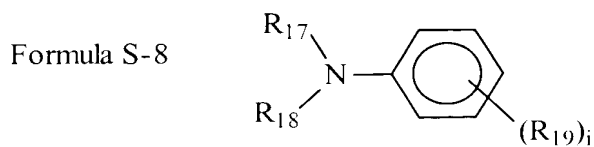
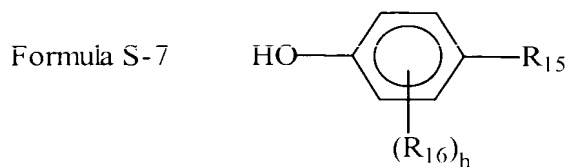
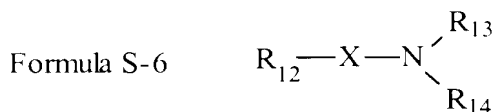
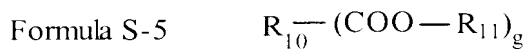
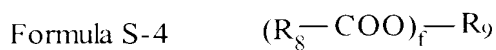
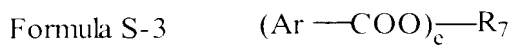
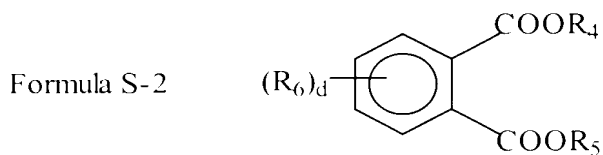
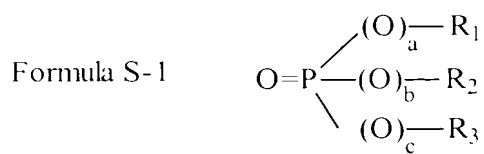
General formula C-I



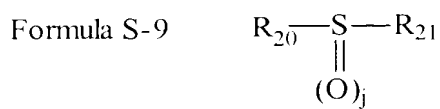
wherein X^1 , X^2 , X^3 and X^4 each independently represents $-\text{SO}-Z^1$, $-\text{SO}_2-Z^1$ or $-\text{SO}_2\text{NR}^{21}\text{R}^{22}$; each Z^1 independently represents a substituted or unsubstituted alkyl group, a substituted or unsubstituted cycloalkyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocyclic group; each of R^{21} and R^{22} independently represents a hydrogen atom, a substituted or unsubstituted alkyl group, a substituted or unsubstituted cycloalkyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocyclic group, and R^{21} and R^{22} are not both hydrogen atoms; Y^1 , Y^2 , Y^3 and Y^4 each represents a monovalent substituent; and a^1 , a^2 , a^3 , a^4 , b^1 , b^2 , b^3 and b^4 represent substituent numbers for X^1 , X^2 , X^3 , X^4 , Y^1 , Y^2 , Y^3 and Y^4 respectively, each substituent number being an integer from 0 to 4 and the sum of a^1 , a^2 , a^3 and a^4 being at least 2.

Claim 46 (New): The method of claim 30, wherein the oil-soluble dye comprises an amount of 0.1 to 20 % by weight relative to the total amount of the ink.

Claim 47 (New): The method of claim 30, wherein the hydrophobic high-boiling organic solvent comprises at least one hydrophobic high-boiling organic solvent selected from the group consisting of hydrophobic high-boiling organic solvents represented by the following formulae S-1 to S-9:



and



wherein:

in formula S-1, R_1 , R_2 and R_3 each independently represents an aliphatic group or aryl group, and a, b and c each independently represents 0 or 1;

in formula S-2, R_4 and R_5 each independently represents an aliphatic or aryl group, R_6 represents a halogen atom, an alkyl group, an alkoxy group, an aryloxy group, an alkoxycarbonyl group or an aryloxycarbonyl group, d is an integer from 0 to 3, and, if d is two or more, a plurality of R_6 groups may be the same as each other or different;

in formula S-3, Ar represents an aryl group, e is an integer from 1 to 6, and R_7 represents a hydrocarbon group or hydrocarbon groups bound to each other via ether linkage;

in formula S-4, R_8 represents an aliphatic group, f is an integer from 1 to 6, and R_9 represents a hydrocarbon group or hydrocarbon groups bound to each other via ether linkage;

in formula S-5, g is an integer from 2 to 6, R_{10} represents a hydrocarbon group other than an aryl group, and R_{11} represents an aliphatic group or an aryl group;

in formula S-6, R_{12} , R_{13} and R_{14} each independently represents a hydrogen atom, an aliphatic group or an aryl group, X represents $-\text{CO}-$ or SO_2- , and R_{12} and R_{13} or R_{13} and R_{14} may be bound to each other to form a ring;

in formula S-7, R_{15} represents an aliphatic group, an alkoxycarbonyl group, an aryloxycarbonyl group, an alkylsulfonyl group, an arylsulfonyl group, an aryl group or a cyano group, R_{16} represents a halogen atom, an aliphatic group, an aryl group, an alkoxy group or an aryloxy group, h is an integer from 0 to 3, and, if h is two or more, a plurality of R_{16} groups may be the same as each other or different;

in formula S-8, R_{17} and R_{18} each independently represents an aliphatic group or an aryl group, R_{19} represents a halogen atom, an aliphatic group, an aryl group, an alkoxy group or an aryloxy group, i is an integer from 0 to 4, and, if i is two or more, a plurality of R_{19} groups may be the same as each other or different;

in formula S-9, R_{20} and R_{21} each independently represents an aliphatic group or an aryl group, and j is 1 or 2;

in the formulae S-1 to S-9, in any of R_1 to R_6 , R_8 , and R_{11} to R_{21} that represents an aliphatic group or a group containing an aliphatic group, the aliphatic group may be straight-chain, branched or cyclic, may contain an unsaturated bond, and may have a substituent group; in any of R_1 to R_6 , R_8 and R_{11} to R_{21} that represents a cycloalkyl group or a group containing a cycloalkyl group, the cycloalkyl group may contain an unsaturated bond in a 3- to 8-membered ring thereof, or may have a substituent group or a crosslinking group; and in any of R_1 to R_6 , R_8 , and R_{11} to R_{21} that represents an aryl group or a group containing an aryl group, the aryl group may be substituted; and

in the formulae S-3, S-4 and S-5, any of R_7 , R_9 and R_{10} that is a hydrocarbon group may contain a cyclic structure or an unsaturated bond or may have a substituent group.

Claim 48 (New): The method of claim 30, wherein the relative dielectric constant at 25 °C of the hydrophobic high-boiling organic solvent is from 3 to 12.

Claim 49 (New): The method of claim 30, wherein the hydrophobic high-boiling organic solvent comprises an amount of 50 to 1500 % by weight relative to the oil-soluble dye.

Claim 50 (New): The method of claim 30, wherein the colored fine particles comprise a content amount of 1 to 45 % by weight relative to the total amount of the ink.

Claim 51 (New): The method of claim 30, wherein the colored fine particle dispersion comprises colored fine particles with an average particle diameter of at most 100 nm.

Claim 52 (New): The method of claim 30, wherein the dispersing by emulsification of the ionic group-containing water-insoluble polymer comprises emulsifying the organic solvent containing the ionic group-containing water-insoluble polymer either by addition of water to the organic solvent solution or by addition of the organic solvent solution to water.